

L Number	Hits	Search Text	DB	Time stamp
3	2	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same interaction) and (gate or electrode) and capacitor and @ad<20030312	USPAT; US-PGPUB	2004/06/25 09:03
4	0	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same interaction) and (gate or electrode) and capacitor	EPO; JPO; DERWENT; IBM_TDB	2004/06/25 09:00
5	2	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same (reaction or interface or interfacial)) and (gate or electrode) and capacitor	EPO; JPO; DERWENT; IBM_TDB	2004/06/25 09:03
6	0	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same (reaction or interface or interfacial)) and (gate or electrode) and PMOS and NMOS	EPO; JPO; DERWENT; IBM_TDB	2004/06/25 09:03
7	15	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same (reaction or interface or interfacial)) and (gate or electrode) and PMOS and NMOS	USPAT; US-PGPUB	2004/06/25 09:16
8	14	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same (reaction or interface or interfacial)) and (gate or electrode) and PMOS and NMOS) and @ad<20030312	USPAT; US-PGPUB	2004/06/25 09:17
9	0	((dielectric or insulative or insulating or insulator) same metal same polysilicon same (prevent or preventing) same interaction) and (gate or electrode) and PMOS and NMOS	USPAT; US-PGPUB	2004/06/25 09:16
10	176	(high adj (dielectric or k)) same polysilicon same (prevent or preventing)	USPAT; US-PGPUB	2004/06/25 10:05
11	172	((high adj (dielectric or k)) same polysilicon same (prevent or preventing)) and (gate or electrode)	USPAT; US-PGPUB	2004/06/25 10:05
12	160	((high adj (dielectric or k)) same polysilicon same (prevent or preventing)) and (gate or electrode)) and @ad<20030312	USPAT; US-PGPUB	2004/06/25 09:18
13	13	(high adj (dielectric or k)) same polysilicon same (prevent or preventing)	EPO; JPO; DERWENT; IBM_TDB	2004/06/25 10:05
14	12	((high adj (dielectric or k)) same polysilicon same (prevent or preventing)) and (gate or electrode)	EPO; JPO; DERWENT; IBM_TDB	2004/06/25 10:05

US-PAT-NO:

6617210

DOCUMENT-IDENTIFIER:

US 6617210 B1

TITLE:

Method for making a semiconductor device having a high-k gate dielectric

----- KWIC -----

Detailed Description Text - DETX (8):

Although silicon nitride is a preferred material for forming insulating layer 102, other materials that are compatible with both dielectric layer 101 and polysilicon, and that prevent polysilicon from interacting with dielectric layer 101, may be used instead--without departing from the spirit and scope of the present invention. Substrate 100 may comprise a thin silicon-on-insulator substructure, e.g., one that is sufficiently thin to facilitate the subsequent formation of a fully depleted device. Devices built upon such a substrate may be less susceptible to work function shifts that may result, when forming a ~~thin metallic nitride layer between a~~ high-k gate dielectric and a polysilicon-based gate electrode. For that reason, when substrate 100 comprises a thin silicon-on-insulator substructure, insulating layer 102 may comprise a metallic nitride, for example, titanium nitride or tantalum nitride.

US-PAT-NO: 6287965

DOCUMENT-IDENTIFIER: US 6287965 B1

TITLE: Method of forming metal layer using atomic layer deposition and semiconductor device having the metal layer as barrier metal layer or upper or lower electrode of capacitor

----- KWIC -----

Brief Summary Text - BSTX (6):

To obtain a high dielectric BST film having excellent capacitance and leakage current characteristics, a thermal process needs to be performed at a high temperature after depositing BST film. At this time, a barrier metal layer needs to be formed to prevent oxidation of an ohmic layer and a polysilicon plug due to diffusion of oxygen. The barrier metal layer is interposed between the polysilicon plug and a lower electrode.

Detailed Description Text - DETX (59):

Referring to FIG. 9E, an upper electrode 320 is formed on the high dielectric film 318. To prevent oxidation caused by the underlying high dielectric film 318 during a thermal process, the upper electrode 320 is formed such that a metal layer 320a acting as a barrier layer is formed of TiN or TaN on the high dielectric film 318 and a polysilicon layer 320b is formed on the metal layer 320a.

Detailed Description Text - DETX (60):

Instead of using the metal layer 320a and the polysilicon layer 320b, the upper electrode 320 may be formed of a metal layer, which is composed of a reactive metal (A), an amorphous combination element (B) for preventing crystallization of the reactive metal (A) and nitrogen (N), and nitrogen (N), for example, a TiAlN layer. To achieve excellent step coverage of the trench type high dielectric film 318, the upper electrode 320 is preferably formed by atomic layer deposition in the same manner as used in forming the lower electrode 314.